Exhibit A

UPS CampusShip: View/Print Label

1. **Print the label(s):** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the dotted line.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**

   Customers without a Daily Pickup
   - Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   - Hand the package to any UPS driver in your area.
   - Take your package to any location of The UPS Store®, UPS Drop Box, UPS Customer Center, UPS Alliances (Office Depot® or Staples®) or Authorized Shipping Outlet near you. Items sent via UPS Return Services℠ (including via Ground) are also accepted at Drop Boxes.
   - To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

   Customers with a Daily Pickup
   - Your driver will pickup your shipment(s) as usual.

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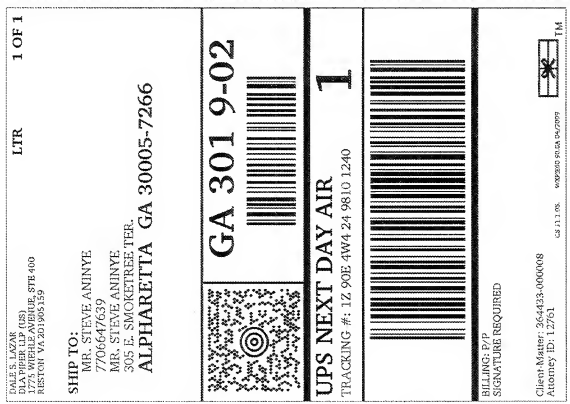

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July 8, 2009

VIA CERTIFIED MAIL

Mr. Steven Aninye
305 E. Smoketree Ter.
Alpharetta, Georgia 30005

Re: U.S. Utility Patent Application No. 10/591,830 filed September 6, 2006
"SYSTEM AND METHOD FOR TRACKING, MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS"
Our Reference: 364433-P0001

Dear Steve:

As you know, Omnilink Systems, Inc. is pursuing a patent for a "System And Method For Tracking, Monitoring, Collecting, Reporting And Communicating With The Movement Of Individuals" which was filed September 6, 2006 by Omnilinks previous attorney, Miller & Martin. During the prosecution of this application, it has come to our attention that Yoganand Rajala was erroneously omitted as an inventor for this patent application at the time of filing.

In order to correct this omission, it will be necessary for you and Mr. Rajala to acknowledge co-inventorship through the execution of a new Declaration listing you both as inventors. To this end, we have enclosed a new Declaration, a copy of the complete specification, including the claims, Abstract and Drawings as originally filed, as well as an Amendment filed June 19, 2009 redirecting the claims to tamper detection using an optical conductor in the strap.

We ask you to return the executed Declaration to us by July 28, 2009, and provide a return envelope for your convenience. If you do not return the Executed Declaration to us by this deadline, your lack of cooperation will be accepted as a refusal to sign.

Should you have any questions or comments, please do not hesitate to contact me.

Very truly yours,

Dale S. Lazar

DSL/maf
Enclosures

ALL PATENTS, INCLUDING DESIGN FOR APPLICATION BASED ON PCT, PARIS CONVENTION, NON PRIORITY, OR PROVISIONAL APPLICATIONS	**COMBINED DECLARATION AND POWER OF ATTORNEY U.S.A.**	FOR ATTORNEYS' USE ONLY ATTORNEYS' DOCKET NO 364433-P0001

As a below named inventor, I declare that my residence, post office address and citizenship are stated below next to my name, the information given herein is true, that I believe that I am the original, first and sole inventor (if only one name is listed at 101 below), or an original, first and joint inventor (if plural inventors are named below at 101-103, or on additional sheets attached hereto) of the subject matter which is claimed and for which patent is sought on the invention entitled:

Title **SYSTEM AND METHOD FOR TRACKING, MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS**

which is described and claimed in:

- ☒ PCT International Application No. **PCT/US06/12754**, filed **April 6, 2006,** (if applicable) and amended on
- ☐ the attached specification
- ☐ the specification in application Serial No. _____, filed

I (We) hereby state that I (We) have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above

I (We) acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56

I (We) hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(d) or §365 (b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate or §365(b) having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
			☐	☐
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
			☐	☐
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

Application No. **60/670,082**	Filing Date **April 6, 2005**	Application No. **60/678,823**	Filing Date **May 6, 2005**

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s), or §365 (c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

POWER OF ATTORNEY: I (We) hereby appoint DLA Piper LLP US, Intellectual Property Group, telephone number (730) 773-4000 (to whom all communications are to be directed), and persons of that firm who as associated with USPTO Customer No.

47604

, individually and collectively my attorneys, with full powers of substitution and revocation, to prosecute this application and to transact all business in the USPTO connected therewith.

*Inventor(s) name must include at least one unabbreviated first or middle name.

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I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 101*	SIGNATURE OF INVENTOR 102*	SIGNATURE OF INVENTOR 103*
DATE	DATE	DATE

☐ Additional inventors are named on separately numbered sheets attached hereto.

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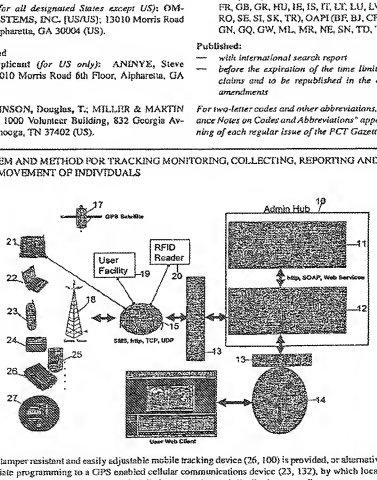
(54) Title: SYSTEM AND METHOD FOR TRACKING MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS



(57) Abstract: A tamper resistant and easily adjustable mobile tracking device (26, 100) is provided, or alternatively may be created by adding appropriate programming to a GPS enabled cellular communications device (23, 132), by which location data and other information is transmitted to an administrative hub (10) for processing and distribution according to operator defined parameters. Confirmed two-way communications are possible with the mobile devices havin display screens.

WO 2006/108077 A1

PCT/US06/12754

APPLICATION FOR UNITED STATES PATENT

Inventor(s): Steve Aninye

Invention: System and Method for Tracking, Monitoring, Collecting, Reporting and Communicating with the Movement of Individuals

SPECIFICATION

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System and Method for Tracking, Monitoring, Collecting, Reporting and Communicating with the Movement of Individuals

Field of the Invention

The present application claims priority to the April 6, 2005 filing date of U.S. provisional patent application, Serial No. 60/670,082 and the May 6, 2005 filing date of U.S. provisional patent application, Serial No. 60/678,823.

[0001] The system and method of the present invention is utilized in tracking the position of an individual using GPS signals and cell phone location technologies for both real time and later comparison with parameters and providing bidirectional communication capability with the tracking device associated with the individual.

Background of the Invention

[0002] Many devices and systems are known to monitor the position and movements of individuals. Employers use devices to monitor employees against diversion from work-related locations, and such devices may be installed in work vehicles, attached to accessories such as computers, or comprise other GPS enabled devices. In addition, in the case of house arrest, the offender must often carry a body-worn device to permit position monitoring. The monitoring of individuals may take either active or passive forms. An active system will compare its location with ongoing restrictions to detect violations. Such a violation may occur by either coming into broadcast range of a prohibited zone, leaving broadcast range of a confinement zone, or by actual location determination and mapping against both permitted and exclusion zones. Alternatively, passive devices may simply record and transmit location information for later or real time comparison with permitted and excluded zones at a remote system.

[0003] Many devices have been proposed and employed for such uses. Among the most common are multi-component systems. Such systems typically include a wearable radio

frequency (RF) bracelet that communicates with some type of base device. This may be a fixed base system with access to a telephone line that places a telephone call to a monitoring service anytime the RF signal is not detected. Alternatively, it may be a portable base equipped with GPS location technology that detects the presence of the bracelet RF signal and also tracks movements and periodically communicates, typically through wireless phone technology, to report those locations. These devices may also have the capability of displaying text messages from the monitoring officer or agency on an LCD screen. Some base attachments have attempted to utilize voice recognition technology to provide verification of the identity of a person present and responding to a phone call placed through the base unit.

[0004] Generally absent from these systems is the ability for real time or near real time communication directly between a remote system and the locator device associated with the individual. In addition, the component costs of custom devices is unnecessarily high compared to the prices available for mass market cellular telephone and GPS technology. Many systems require dedicated phone lines, require the monitored individual to wear or carry obtrusive hardware, require additional hardware for monitoring personnel, lack adequate battery life for multi-day usage, are subject to drift due to GPS signal errors, and lack a method for confirming receipt of messages sent between monitoring personnel and a monitored individual.

[0005] Accordingly, there is a need for an individual tracking system that can be deployed with software capable of running on a wide variety of devices and is therefore largely device agnostic.

[0006] There is also a need for an individual tracking system that does not require the use of dedicated phone lines or obtrusive hardware. There is also a need to provide real time or active tracking and active notification to monitoring personnel.

Summary of the Invention

[0007] Accordingly, it is an object of the invention to provide a largely device agnostic system for monitoring of individuals.

[0008] It is further an object of the invention to implement individual tracking capability without the necessity of obtrusive hardware or dedicated phone lines.

[0009] It is yet another object of the invention to provide an individual tracking system that does not require specialized hardware for monitoring personnel.

[00010] It is a further object of the invention to provide active or real time location information concerning monitored individuals and to provide active notification to monitoring personnel.

[00011] It is another object of the invention to provide a method for confirmed communications between monitoring personnel and a monitored individual.

[00012] It is yet a further object of the invention to provide an easily adjustable and tamper resistant wearable tracking device.

Brief Description of the Drawings

[00013] Figure 1 is a schematic diagram showing the communication paths of components utilized in the invention.

[00014] Figure 2 is a block diagram of the functional architecture of an administrative hub server.

[00015] Figure 3 is a functional architecture diagram of an administrative hub portal server.

[00016] Figure 4 is a schematic diagram reflecting the processing of communications by a portable device according to the present invention.

[00017] Figure 5 is a functional architecture diagram of a wearable tracking device according to the present invention.

[00018] Figure 6 is a high level electrical block diagram of a wearable tracking device according to the present invention.

[00019] Figure 7A is a perspective view of a tamper resistant strap for use with a wearable tracking device according to the present invention.

[00020] Figure 7B is a perspective view of a wearable device according to the invention with strap affixed.

[00021] Figure 7C is a perspective view of a locking pin utilized to hold the strap of Figure 7B in place.

[00022] Figure 7D is a rear perspective view of a monitoring device according to the present invention.

[00023] Figure 7E is a perspective view showing the method of attaching a monitoring device of the present invention to the wearer's leg with the device, attached strap and lock bracket.

[00024] Figure 7F is a perspective view of a lock bracket base according to the present invention in isolation.

[00025] Figure 8 is a schematic and flow chart reflecting a confirmed communication protocol that may be implemented according to the invention.

[00026] Figure 9A is a screen display of a graphical location history map that may be generated with location data provided by the invention.

[00027] Figure 9B is a pop up text window reflecting the graphical data of Figure 9A.

[00028] Figure 10A is a screen display of graphical map of an inclusion zone defined according to the present invention.

[00029] Figure 10B is a schematic representation of inclusion and exclusion zones.

[00030] Figure 11 is a screen display of a status report for individuals being monitored according to the present invention.

[00031] Figure 12 shows a screen display of a data entry template for a new individual to be monitored according to the present invention.

[00032] Figure 13 is a screen display of a representative violation report that may be generated when utilizing the invention of the present system to monitor offenders subject to restrictions.

[00033] Figure 14 is a screen display of a representative device report for devices being monitored according to the present invention.

[00034] Figure 15 shows a screen display of a management function template for editing schedules.

[00035] Figure 16 depicts a screen display of a management schedule for automatic notification procedures.

[00036] Figure 17 shows a screen display of an administrative data entry form for establishing a new user on the system.

Detailed Description of the Invention

[00037] Turning then to Figure 1, a schematic overview of the communication path utilized in the present invention is illustrated. Control of the invention is preferably maintained at one or more administrative hubs 10 running application server 11 functionality and portal server 12 functionality. The portal server 12 will communicate through gateways 13, generally routers or a location aggregator, with the Internet 14 or some combination of public networks 15, possibly including the Internet, and telephone networks. Communications are then directed to and/or from a wide variety of devices with respect to the administrative hub 10. For instance, an RFID reader 20 may detect and report the presence of an RFID tag. The administrative hub 10 may generate a message to a controllable device user at facility 19 and receive a confirming

acknowledgement. A user of the invention may obtain information via personal computer 21, laptop computer 22, cell phone 23, Blackberry 24, Palm Pilot 25 or other digital communication device. The tracking device may be in a wearable ankle bracelet box 26, installed in a vehicle 27, or operated on GPS enabled mobile communications devices such as Palm Pilots 25, Blackberrys 24, cell phones 23, or even on appropriately configured laptop computers 22 If the tracking software is installed on these or similar devices, then location information generated from GPS satellite 17 and confirmed by assisted GPS location data for cell tower triangulation, together with any other types of data collected by the mobile communication device, is periodically transmitted to the administrative hub 10. A user of the system with access via a web enabled device is able to graphically display a variety of tracking device information utilizing web client 16. In addition, the user may generate messages to the administrative hub 10 or to any of the described communication enabled devices.

[00038] Turning then to an examination of the system components in greater detail, the logical architecture of a representative administrative hub application server 11 is shown in Figure 2. This server has a standard administration 41 and security 42 functionality. The three principal categories of the services provided by the application server 11 are data services 43, core services 46, and communications services 55. Data services 43 include data housed in OLTP (Online Transaction Processing) or OLAP (Online Analytical Processing) relational or multidimensional databases 45 and data access objects (DAO) 44 to allow data access mechanisms to change independently of the code that uses the data. Core services 46 principally comprise message processor 47 for parsing and either acting upon or forwarding incoming messages for action and building and formatting outgoing messages in appropriate packet format; reporting services 48 for building reports from event logs stored in data services 43 and

organizing the data for transmission to portal server 12; remote parameters management 49 for storing and managing parameters such as time intervals for a mobile unit to take location fixes and for initiating communications with administrative hub 10, and intervals for battery charge testing and reporting and battery charge requirements; notification/alerts 50 for configuring conditions that will generate alerts and reports, including persons to be notified for types of events, immediate or delayed timing for those notifications, and the communication methods to be employed in notifications; system configuration services 51 to hold parameters defining the system and user preferences which may include language choice, time zone, and the like; location services 54 to convert data from mobile units to position, and geocoding to or from a particular address, as well as performing assisted GPS location calculations and any necessary drift correction; scheduling services 53 for managing times including regular schedules for exclusion and inclusion zones, as well as special permissions or allowed variations from usual schedule, and required appointments at particular addresses; and monitoring services 52 for comparing reported locations against rules for the monitored individual's locations and generating appropriate information to the notification/alerts module 50 in the event of violations. The communication services component 55 includes inbound and outbound message queues 57, 58; communication adapters 56 to allow messaging with a variety of devices; data bridge 59 to permit data from core services to be formatted into outbound messages, and inbound messages to be formatted for access by core services 46; and personalization 68 to permit users to specify custom reports and preferred screen displays. Finally, an interface 61 such as XML protocol for accessing web services is provided.

{00039} Figure 3 shows a similar logical architecture of an administrative hub portal server 12 which once more has standard administrative 70, security 71 and interface 99 modules. The

principal functionality of portal server 12 may be divided into data services 72, system services 76, application services 85 and a browser 98. Data services 72 principally comprise a repository for data needed to reply to inquiries from users accessing the system using their web client 16 (shown in Figure 1). Principal components of data services 72 include system metadata repository 73 holding information with respect to the system components so that they may be accessed when needed to carry out actions; workflow repository 74 queuing the actions to be carried out; and OLTP/OLAP storage 75. System services provide a number of modules corresponding to core services on the application server including reporting services 80, notification alerts 84, and location services 82. In addition, system services provide mapping services 83 for rendering locations on graphical maps, workflow executive 72 for parsing actions in the workflow repository 74 and commencing execution of those actions, data integration 78 for merging structured and unstructured data into a useful form such as XML for use by the system, and digital business identity 79 for holding user management information utilized by the system's access control logic. The application services 85 include display related personalization 92; search functionality 87; reporting 86; points of interest 89 for assigning descriptive names to physical locations in lieu of addresses; subscriptions 90 for allowing users to specify types of information to receive, such as whenever a new offender is added for monitoring, whenever a mobile unit is disabled, or other types of events separate from the violation type notification/alerts; directions 88 for facilitating navigation to locations; and calendaring/scheduling 91 to communicate schedule information with scheduling services 53 on application server 11. Presentation services 93, principally comprising templates 94, themes 95, and rendering 97, provide for enhanced screen displays presented in browser 98. Events 96 translates user keystrokes and mouse clicks into workflow actions.

[00040] Figure 4 shows an overview of messaging between application hub 10 and user device 100. A message may be generated by application server 12 and then communicated via Internet and typically public cellular network 15 to device 100 where it is inserted in the inbound message queue 104. Messages are then read into the messaging hub 102 which corresponds to communication services 114 shown in Figure 5 and deleted from the inbound queue 104. Received messages are then processed for message type and appropriate message data is transmitted to embedded application 101 in the device 100. Similarly, the embedded application 101 may generate acknowledgement for messages which are transmitted to messaging hub 102, formatted and inserted in outbound message queue 103.

[00041] The logical architecture of a representative device utilized in the invention is reflected in Figure 5. A preferred device uses a real time operating system (RTOS) or a virtual machine software implementation of a desired CPU and native device drivers 111 to permit operation of the system with a wide variety of devices 100. In even the more basic tracking devices typified by vehicle tracking 27 or offender tracking 26 devices, there are device drivers 115 to interface with much of the hardware shown in Figure 6, systems services 113 to monitor device status 112 or to generate alerts, and communication services 114 to transmit stored data and alerts as described in connection with Figure 8. Wireless business framework 116 implements the confirmed delivery of messages, as also explained in connection with Figure 8, while presentation framework 117 contains dispatch module 118, which effectively is a calendaring or scheduling functionality, and messaging 119 which is only available on more advanced devices such as handhelds, phones with LED displays, or computers. Monitoring rules and constraints 120 are implemented to generate active monitoring notifications while location tracking 121 generates GPS and assisted GPS location data.

[00042] Figure 6 is a high level block diagram of a device **100** used in the invention. Typically, the device is based upon a GPS enabled cell phone, principal components of which are flash memory **129**, CPU **130**, data bus **131**, cellular modem **132**, antenna **133**, GPS receiver **134**, display driver **136**, speaker **140**, and microphone **141**. The operating system or virtual machine software, as appropriate to the device, may be installed in flash memory **129** and operates in connection with CPU **130** to present a standard device profile to the system. Communications are transmitted from the CPU through the data bus **131** to cellular modem **132** and broadcast in the form of digital packets via antenna **133**. Similarly, incoming messages travel in the reverse sequence. The GPS receiver **134** is utilized to generate location information. Because GPS location requires line of sight access to GPS satellites **17**, and because GPS location is sometimes subject to erroneous results due to drift or temporary satellite misorientation, GPS assist **135** may be added to the device or the cellular network. Assisted GPS generates location information based upon signals received from nearby cellular communication towers **18** and is only accurate to within several hundred feet rather than the GPS location accuracy of only several feet. Nonetheless, assisted GPS provides valuable location confirming information as well as at least general location information when line of sight access to GPS satellites is unavailable. Alternatively, location information may be provided by a location aggregator. The location aggregation service may be provided by a cellular network provider or an entity operating a gateway in connection with the cellular network or other broadcast communication provider. Many cellular networks are now capable of determining the location of GPS enabled cellular handsets with some degree of accuracy, particularly handsets that facilitate assisted GPS such as those using Qualcomm 6050 or 6250 microprocessors which permits the network to use AFLT. While the 6250 microprocessor can operate autonomously to

determine the co-ordinates of the handset, both of the Qualcomm processors can also operate in response to a cellular network query, or by generating a their own location query, to cause the network to acquire the GPS data received by the cellular handset, and to utilize Advanced Forward Link Triangulation (AFLT) or other cellular network information, to produce an assisted GPS geolocation for the handset. In a further refinement, the GPS and cellular network data may be processed by the location aggregation service for accuracy. For instance, location information data may be processed utilizing noise processing theorems to correct for bad data such as drift caused by a GPS satellite wobble, or the effects of changes in signal reflection and absorption caused by varying conditions such as locations in urban canyons, the woods, or beneath heavy cloud cover, and atmospheric ionization changes from day and night. Information as to the geolocation of the handset is then communicated by the location aggregator to the administrative hub, and in appropriate instances may also be communicated to the handset.

[00043] While the display driver 136, microphone 141 and speaker 140 may be disabled or removed from vehicle location 27 or offender bracelet 26 constructions, other hardware may be added. For instance, in the case of an offender bracelet 26, tamper detector 139 and LED driver 137 and LED emitter receiver 138 are added to provide redundant tamper indicators as explained below in connection with Figure 7.

[00044] A preferred offender tracking device 26 is illustrated in Figures 7A – 7F. The principal components of tracking device 26 are lock bracket 144 as shown in isolation in Figure 7F, a strap 150 shown in isolation in Figure 7A, and main housing 170 shown in bottom view in Figure 7D and top phantom view in Figure 7B. Turning first to the strap 150 of Figure 7A, a representative strap 150 might be manufactured from plastic molded over optical cable 151 and light guide 153. The strap will preferably have a light guide/connector 152, apertures 154 to

accept fasteners, and apertures 155 to receive locking posts. An alternative strap design includes a flexible battery within the strap. Optical cable 151 may still be included in the strap 150, and significant power resources for the device can be located within the strap. This results in the main housing 170 no longer having to contain the entire power supply, and by utilizing a smaller battery within the housing, the size of the housing may be reduced, resulting in a device that is more easily worn. An exemplary battery technology that may be employed in such a strap is a thin flexible battery using NECs organic radial battery technology. Turning then to Figure 7D, it can be seen that fasteners 156 have been received through apertures 154 of strap 150 and thereby fasten the strap 150 to bottom of main housing 170. As shown in Figure 7B, main housing 170 contains recharge connector 180, tamper sensor switch 181, battery 182, antenna 183, and generally the components 184 reflected in Figure 6. When used without a power strap, the battery 182 is preferably a long life battery which has a life of up to approximately 21 to 30 days when used for offender monitoring in monitoring units having current efficient circuitry and antenna design, and effective power management algorithms to minimize the number and duration of transmissions from the unit and the intensiveness of calculations carried out in the mobile unit. This permits monthly visits to a probation officer with the necessity of recharging the battery by the offender only once, if at all. When used with a power strap, the battery in the strap 150 preferably has these long lived characteristics, and the battery 182 within the housing 170 may be simply a short term back-up power supply, to operate the device temporarily if the power strap is damaged or disconnected. The storage in device 100 is sufficient to store messages and GPS location recordings for up to about two weeks depending upon the frequency with which GPS location readings are recorded. The bottom of main housing 170 in Figure 7D shows a variety of features including opening 171 for tamper sensor 181, opening 172 for

recharge connector 180, rearward facing hooks 173, lens opening 174 to transmit light from a diode to the light guide connector 172 of strap 150 and forward lip 175 defining cavity 176. The side walls for cavity 176 have apertures 177 to receive locking pin 160 shown in Figure 7C. To attach the device 26 as shown in Figure 7E, the lock bracket 144 is placed on the offender 190. Accordingly, the bottom surface of the lock bracket 144 is preferably made with comfortable to wear surface. The top surface of lock bracket 144 has an outer flange 146 to receive housing 170 and a plurality of upstanding pins. At one end are two relatively short pins 145 that interface in the strap openings 154 that receive fasteners 156. At the opposite side of the face of lock bracket 144 are two taller pins 148 that are received in apertures 155 of strap 150 after it encircles the offender's arm or leg 190. These taller pins 148 have lateral apertures 165 to receive the locking pin 160. Also shown is pin 149 that is received in aperture 171 to activate the tamper sensor switch 181. Thus, to fit the device 26 to the offender, lock bracket 144 is placed on the offender's leg 190. The light guide connector 152 end of the strap 150 is secured to the housing 170 as by screws 156. The strap 150 is placed so that the unattached end is received over posts 145, 148. The strap is then wrapped around the offender's leg 190, and the main housing hooks 173 are received in flange recesses 147 on lock bracket 144, while posts 148 extend upward into cavity 176. Then locking pin 160 is passed through openings 177 and pin holes 165 so that the pin head 163 extends from one side of front lip 175 and base 161 extends from the other side with lateral section 162 extending therebetween. In the event that the offender should attempt to remove the pin 160, it will break at breakpoint 164 and the tamper detector will be activated. Similarly, if the optical cable 151 of strap 150 is cut, the tamper detector will be activated. Finally, if the main housing 170 is removed from lock bracket 144, the tamper sensor switch 181 will be activated. In any of these instances, the device 26 will generate a message to the

administrative hub 10 advising of the tampering event. An effective tamper detector to ascertain whether there has been a breach of the housing **170** may combine a light sensor that is activated when light enters the housing and an electromagnetic field sensor that is activated if metal components of the housing are dislocated. A sophisticated tamper detector used with the optical cable may utilize an LED driver **137** and one or more LEDs to emit at least two different frequencies of light in alternating or random sequence through the lens opening **174** into the light guide connector **152** and outbound on a first length of optical cable **151** to light guide **152** and back inbound on the second length of optical cable **151**. Simultaneously, the LED receiver is informed of the frequency being emitted, and if either no light or the wrong frequency light is detected inbound, then a tamper alert is generated.

[00045] It will be appreciated that in securing the device **26** to an offender, it is not necessary to cut strap **150**. Instead, the strap will fit a substantial range of offender leg sizes and requires no special tools to secure the unit on the offender's leg. Prior art devices have generally required the strap be cut to length and in the event that optical cable is utilized for tamper indication, the difficulties of accurately splicing the cable not only requires special tools, but also is likely to be sufficiently defective that false tamper alerts may be generated. Furthermore, when the device is removed from an offender, only the pin **160** is destroyed, so that the strap **150** may be reused.

[00046] Turning then to Figure 8, the messaging protocol providing for confirmed messaging is illustrated. First, a device **100** generates message **201**. This message may be generated as a result of an alarm condition such as tampering, low battery, or entry into an exclusion zone, or alternatively may be simply a regularly scheduled transmission of location data as the device will be configured to take location readings periodically, typically in intervals of about one to five minutes, and to transmit those readings in batches, typically about every thirty minutes,

preferably in a proprietary data packet. Such a data packet preferably has a header identifying message type, a security token, and message data. After the device **100** generates message **201**, the message is transmitted **202** and received **203** by administrative hub **10**. The data packet is parsed **204** to confirm a message type, the sending device, that security protocol is satisfied, and to determine that the data is not corrupt. Administrative hub **10** then sends an acknowledgement **205** to device **100** which receives the acknowledgement **206** and deletes the message from its outbound message queue **207**. If the administrative hub determined the message was corrupt, it would request that the message be resent. If the device **100** did not receive an acknowledgement within a predetermined time period, it would resend the message.

[00047] It is also possible for messages to be generated at the administrative hub **10**. These messages might actually be entered by systems personnel at the administrative hub **10** or by monitoring personnel interfacing with the administrative hub via user web client **16** or other suitably enabled device. Accordingly, a typical message generated might be from a probation officer advising an offender with a display equipped monitoring device that he has a court date at a particular time and place; or a message from a dispatcher to a pickup/delivery vehicle advising of an additional address to include on a route; or an administrative change to redefine an exclusion zone or alter a parameter of operation such intervals for taking and reporting location readings. Once the message is generated **210**, the messaging hub transmits **211** the message which is received **212** by device **100**. The device **100** parses **213** the message for message type and confirms appropriate security token is present and that the message is not corrupt. Then the device **100** generates an acknowledgement **214** which is sent to messaging hub and received **215**. The administrative hub **10** then records confirmation that the message was received by device **100**. The device **100** proceeds to process the message data **217**.

[00048] When the administrative hub **10** is messaging device **100** with user display means such as a LED screen, messages may be sent which request a response. For instance, probation officer might ask an offender if he needs a ride to a court hearing. A dispatcher might ask a delivery/pickup person if he can make an extra pickup or delivery, and in either case request a reply. In the event that the message is received by the device **100** but there has been no reply, it is possible for the administrative hub to issue a message recall **220**. When that recall is received **221** by device **100**, it parses recall message **222**, generates an appropriate acknowledgement **223**, and proceeds to delete the message. The administrative hub receives the acknowledgement **224** and records the deletion of the message **225**. Alternatively, if the device user responds to the message **230**, the response is sent to the administrative hub **10** and received **231**. Then the response is parsed **232** and acknowledged **233**, and the administrative hub proceeds to process the data in the response, perhaps informing a dispatcher that the requested pickup or delivery has been accepted by the pickup/delivery driver. The device **100** receives the acknowledgement **234** and proceeds to delete the response from its messaging queue **235**. Thus, the invention provides for a robust two-way messaging system with confirmed messaging delivery and message recall capability. The administrative hub **10** has the capability of sending inquiries to the device **100** in order to return information regarding device status and location information.

[00049] Figures 9 and 10 display a user web client **16** such as would be available to a probation officer or dispatcher utilizing the invention. Figure 9A discloses a location history map **300** with indicators **301** showing the locations of a tracked individual over time. To utilize this reporting functionality, a location history is selected in the location menu **311**. The target entity is selected **302** and displayed **303**. Starting time **304** and ending time **305** are entered and display **306** generates the appropriate mapping. The location history can also be generated in a

text popup screen 315 with text entries 316 corresponding to numbered indicators 301 on the map screen 300. The text route history may be exported 317 into a digital file or document for use apart from the device management and interaction software. As shown in Figure 9A, additional types of reporting and functionality are also available. Report menu 307 provides for the creation of device reports that could include items such as battery power, battery charging events, device tampering attempts, and the like as reflected in greater detail in Figure 14. An event log may be created listing a variety of different types of events that may have transpired; a message report lists messages between a user and the device; an online/offline report lists the times that the device was not within a reporting area; and a proximity report provides data concerning the device's proximity to a particular location or another enabled device. A speeding report extrapolates the device speed between location reports and lists instances when the distance between way points indicates a speed in excess of a user designated limit. A stops report indicates locations where the device has remained stationary for a user-determined interval. A violation report as shown in Figure 13 lists instances in which the device wearer has entered exclusion zones or deviated from established routing. Additional menus 308, 309, 310 are provided for management and administration functions discussed below.

[00050] Figure 10A shows an inclusion/exclusion zone map 320 with defined inclusion zone 321. In the manage entity menu 308, new zones may be added and applied to target entities or existing zones may be edited. For a stationary zone such as inclusion zone 321, an address is entered 323 and named 322. Target entity is selected 324 and displayed 325. The zone has a starting time 326 and ending time 327 as is appropriate for offenders with a probationary term. The zone may be made active on all or selected dates 328, and the radius of the zone defined 330. In addition, the zone may be defined as inclusion or exclusion type 329.

[00051] Two particular advantages of the present invention are the ability to define buffer zones and mobile exclusion or inclusion zones. Relative to mobile zones for instance, inmates on a work crew may be assigned to an inclusion zone within a defined radius of a supervising corrections department official. The official will carry a device that is tracked by a administrative hub 10 as the official moves about. Any inmate whose device leaves the inclusion zone about the official's device generally causes alerts to be sent with tracking data so that the inmate may be apprehended. Similarly, an offender subject to a restraining order not to come within a certain radius of a victim may be equipped with a location device 100 and the victim also equipped with a location device, preferably by simply installing the necessary software on a GPS enabled cellular phone. The system then tracks the mobile locations of both the offender and the victim and sends appropriate alerts to one or more of the victim, the offender, and monitoring officer. In addition, the present invention provides for the creation of buffer zones that are not strict inclusion or exclusion zones. For instance, an offender might be subject to a 500 foot exclusion order, that creates a 500 foot exclusion zone around the victim and the victim's home and place of work. The system permits the definition of a larger buffer zone, perhaps 1000 feet or a quarter mile in radius, and if the offender lingers in the expanded buffer zone beyond a user designated time period, perhaps thirty minutes or an hour, notification is sent to a monitoring officer or included in reports.

[00052] Figure 10B illustrates inclusion and exclusion zones in operation. Specifically, an offender 350 is equipped with tracking device 100. An officer 351 is also equipped with a communication device 353 which might be sending communications to an enabled device ranging in sophistication from a cell phone 23 to a laptop computer 22, or the officer 351 may even be within a corrections facility 356 equipped with a work station 21 running web client 16.

Generally, the corrections facility **356** would be within an inclusion zone **355** to permit the offender **350** to report for monthly probation officer meetings. In addition, the offender **350** would frequently be provided an inclusion zone **360** on workdays during work hours for his place of work. In some instances, the offender **350** would be allowed an inclusion area **365** for some leisure activities during selected hours, inclusion zone **370** for his place of residence and shopping needs, and if attending classes an inclusion zone **375** to attend school. An exclusion zone **380** would be established around the victim's home and possibly the victim's place of work. In addition, according to the present invention, victim **352** may carry a GPS enabled cell phone or other device running software according to the present invention and have a mobile exclusion zone **381** that moves with the victim's location. Thus, if the victim **352** were in one of the offender's **350** inclusion zones, then the system may generate notices to any of the victim **352** to advise of the proximity of offender **350**; to the offender **350** to advise that the usual inclusion zone is not currently permitted; or to officer **351** to alert the officer to the developing situation so that corrective action may be taken.

[00053] Figure 11 shows a useful management report **400** for a probation officer or other corrections official with monitoring responsibility. The report lists offender status by user defined criteria, and in the illustrated case those criteria are of zone violations, battery status and recharge scheduling, failure to call in when required, and strap tampering events.

[00054] Figure 12 shows the new offender data entry template **405** which is generated by the new offender item or manage offender menu **308**. As shown, the new offender template has tabbed **406**, **407** pages to permit the entry of personal information, charges, additional offender details and notifications. Adding new offenders is typically a user administrative function that may be accomplished over user web client **16** shown in Figure 1.

[00055] Figure 13 shows a violation report which is produced from report menu 307. After violation report activity is selected, the user selects the entities or offenders upon which the report is to be generated 411 and those entities are displayed 412. The user also selects the interval 413 over which the violations are to be displayed. When the report is run 417, text report 415 is generated. The report may be exported 416 to a digital file or document for use outside the monitoring and tracking system.

[00056] The report menu 307 also permits generation of device report 420 shown in Figure 14. From this report, the user can select active or nonactive devices 421 or both, and a report is generated showing device ID and type, such as an offender ankle bracelet, cellular phone, or the like, and other pertinent device information. A text report 422 can be generated, and the data in the report may be exported 423 to a digital file or document for use outside the tracking system.

[00057] The manage entity or offender menu 308 permits entity schedules to be edited. Figure 15 shows the edit schedule template 425 whereby utilizing tabs 426, 427, 428 offenders and their schedules may be selected and entries for particular days may be edited with event types 429, which may be appointments or particular time periods for application of inclusion or exclusion zones. In the administration menu 310, authorized administrative personnel may perform necessary updates such as managing various agency accounts, authorizing new agency or company users, editing existing user information, adding new agency or company accounts and editing account information, and adding new devices or editing device information

[00058] Figure 16 displays an edit company report showing company notification defaults 430. This allows the agency, such as a probation department subscribing to the service to designated parameters to the administrative hub 10 specifying communications methods 432 to be employed upon the occurrence of selected events 436 with respect to the agency 431, to a responsible

officer for a particular offender 435 and to a victim or other interested third party. Illustrated communication methods include by fax, pager, e-mail, and SMS text messaging, and messages may be sent immediately 433 and/or provided in summary 434.

[00059] Figure 17 shows another administrative menu 310 section, that of the new user template 440. The template collects system identification information such as user name and login password 441; the user's role 442 within the company or agency which will define to some extent the user's rights to access various aspects of the system, with a company administrator or supervisor having a greater rights than a monitoring officer or dispatcher. User contact information 443 is also collected, and user preferences 444a, 444b may also be input.

[00060] The system provides for the monitoring of a wide variety of criteria. A wearable device 100 may be equipped with a transdermal sensor for offender alcohol monitoring and with a thermometer for body temperature readings. In addition, stationary reporting devices such as active RFID readers 20 or smoke alarms may be placed in facilities 19 and generate signals to administrative hub 10. Upon obtaining a message from such a fixed reporting device, the administrative hub can automatically direct certain actions and make appropriate notifications. For instance, a smoke alarm message could lead the administrative hub 10 to seek confirmation from user facility staff, and in the absence of rapid confirmation that there is no problem, the appropriate fire department may be notified. Similarly, a RFID reader 20 may signal warning that an offender is entering a restricted area and cause appropriate action to be taken. Patients in assisted living facilities may also be equipped with RFID tags that are read and generate messages to the administrative hub 10 that may cause nearby doors to be locked to prevent patients from leaving the building or entering restricted areas such as kitchen and maintenance

facilities, while avoiding the need to maintain the facility in a heavily supervised or lockdown mode.

[00061] Although preferred embodiments of the present invention have been disclosed in detail herein, it will be understood that various substitutions and modifications may be made to the disclosed embodiment described herein without departing from the scope and spirit of the present invention as recited in the appended claims.

Claims

I claim:

1. A wireless tracking device comprising

   (a) a housing enclosing

   a tamper detector,

   memory,

   a processor,

   a cellular modem, and

   a GPS receiver;

   (b) a battery;

   (c) a securing strap having a first end attached to the housing.

2. The wireless personal tracking device of claim 1 wherein the battery is located in the securing strap.

3. The wireless personal tracking device of claim 2 wherein a second battery is located in the housing.

4. The wireless personal tracking device of claim 1 wherein the battery is rechargeable and when fully charged will operate the device for at least 21 days.

5. The wireless personal tracking device of claim 1 wherein the tamper detector is a light sensor in the housing.

6. The wireless personal tracking device of claim 1 wherein the tamper detector is a magnetic field sensor that is activated if metal components of the housing are dislocated.

7. The wireless personal tracking device of claim 1 wherein the tamper detector is an LED receiver, and an LED emitter is used to send a light frequency out over an optical cable in the securing strap and to the LED receiver.

8. The wireless personal tracking device of claim 1 wherein the device is attached to a person utilizing a lock bracket and a locking pin.

9. The wireless personal tracking device of claim 8 wherein the tamper detector is activated by the absence of the locking pin.

10. The wireless personal tracking device of claim 8 wherein the housing has lateral openings and the lock bracket has an upstanding pin with a lateral opening that can be received within the housing, such that the locking pin passes through the housing lateral openings and the upstanding pin lateral opening.

11. The wireless personal tracking device of claim 10 wherein the securing strap extends from its first end about the arm or leg of a person and a second opposite end of the securing strap has an opening that is received on the upstanding pin of the lock bracket and the second end is held between the lock bracket and the housing.

12. A wireless personal tracking device of the type having a housing, a processor, memory, a cellular modem, and a GPS receiver for use in a tracking system to provide for the monitoring and locational tracking of a plurality of monitored persons at an administrative hub which receives GPS data and in response to a timing queue or instruction transmits the GPS data to a cellular network, wherein the cellular network receives the GPS data and collects assisted GPS data and determines the geolocation of the device and provides the geolocation information of the device to the administrative hub.

13. The wireless personal tracking device of claim 12 wherein the cellular network provides the GPS data and assisted GPS data to a location aggregator that provides the geolocation information of the device to the administrative hub.

14. The wireless personal tracking device of claim 13 wherein the location aggregator filters the GPS data and assisted GPS data to correct for erroneous data elements.

15. A wireless personal tracking device of the type having a housing, a processor, memory, a cellular modem, and a GPS receiver for use in a tracking system to provide for the monitoring and locational tracking of a plurality of monitored persons at an administrative hub which receives GPS data and in response to a timing queue or instruction transmits the GPS data to a cellular network, wherein a message may be communicated from the administrative hub and broadcast to the device where the message is received by the cellular modem and processed so that selected message data is conveyed to an embedded application in the device.

16. The wireless personal tracking device of claim 15 wherein the embedded application generates an acknowledgement for the received message that is transmitted to the administrative hub.

17. The wireless personal tracking device of claim 15 wherein the message contains a security token that is verified by the device before processing the message data.

18. The wireless personal tracking device of claim 15 wherein the message is generated by an administrative user in a remote location by communicating with the administrative hub.

19. A wireless personal tracking device of the type having a housing, a processor, memory, a cellular modem, and a GPS receiver for use in a tracking system to provide for the monitoring and locational tracking of a plurality of monitored persons at an administrative hub which receives GPS data and in response to a timing queue or instruction transmits the GPS data to a cellular network, wherein an embedded application in the device generates a message that is transmitted to and received by the administrative hub.

20. The wireless personal tracking device of claim 19 wherein the message is an alarm condition.

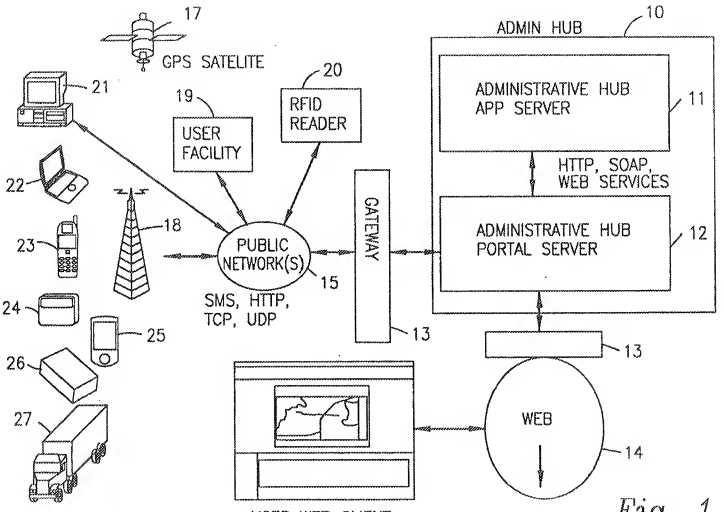

17
GPS SATELITE
ADMIN HUB
10
20
21
19
RFID READER
USER FACILITY
ADMINISTRATIVE HUB APP SERVER
11
HTTP, SOAP, WEB SERVICES
22
18
GATEWAY
23
PUBLIC NETWORK(S)
15
ADMINISTRATIVE HUB PORTAL SERVER
12
24
SMS, HTTP, TCP, UDP
25
13
13
26
WEB
27
14
USER WEB CLIENT

Fig. 1

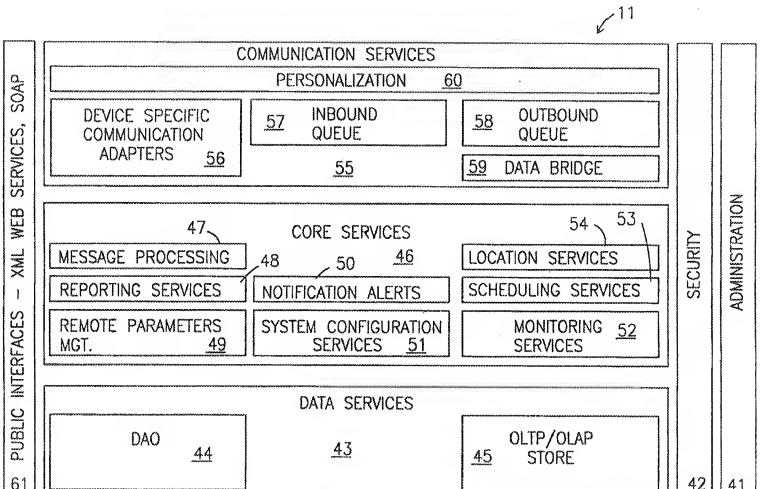

11
PUBLIC INTERFACES – XML WEB SERVICES, SOAP
61
COMMUNICATION SERVICES
PERSONALIZATION 60
DEVICE SPECIFIC COMMUNICATION ADAPTERS 56
57 INBOUND QUEUE
55
58 OUTBOUND QUEUE
59 DATA BRIDGE
47
CORE SERVICES
54
53
MESSAGE PROCESSING
48
50
46
LOCATION SERVICES
REPORTING SERVICES
NOTIFICATION ALERTS
SCHEDULING SERVICES
REMOTE PARAMETERS MGT. 49
SYSTEM CONFIGURATION SERVICES 51
MONITORING SERVICES 52
DATA SERVICES
DAO 44
43
OLTP/OLAP STORE 45
SECURITY
42
ADMINISTRATION
41

Fig. 2

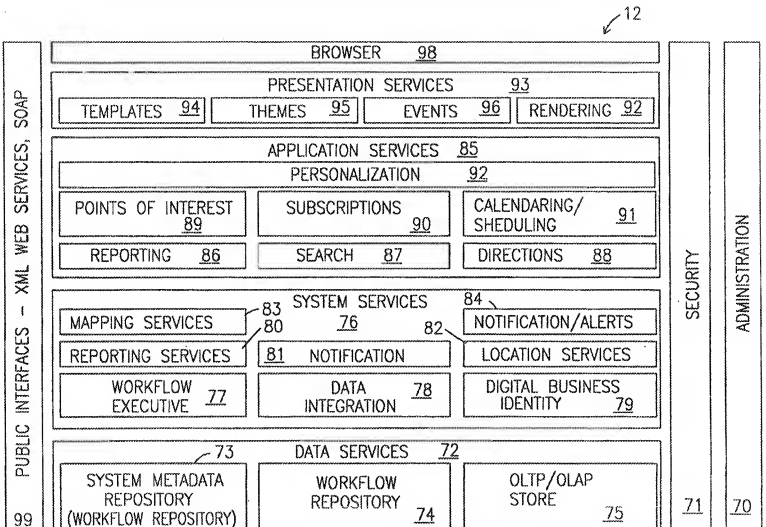

12
BROWSER 98
PRESENTATION SERVICES 93
TEMPLATES 94
THEMES 95
EVENTS 96
RENDERING 92
APPLICATION SERVICES 85
PERSONALIZATION 92
POINTS OF INTEREST 89
SUBSCRIPTIONS 90
CALENDARING/ SHEDULING 91
REPORTING 86
SEARCH 87
DIRECTIONS 88
SYSTEM SERVICES 76
83
84
80
82
MAPPING SERVICES
NOTIFICATION/ALERTS
REPORTING SERVICES
81 NOTIFICATION
LOCATION SERVICES
WORKFLOW EXECUTIVE 77
DATA INTEGRATION 78
DIGITAL BUSINESS IDENTITY 79
73
DATA SERVICES 72
SYSTEM METADATA REPOSITORY (WORKFLOW REPOSITORY)
WORKFLOW REPOSITORY 74
OLTP/OLAP STORE 75
PUBLIC INTERFACES – XML WEB SERVICES, SOAP
99
SECURITY
71
ADMINISTRATION
70

Fig. 3

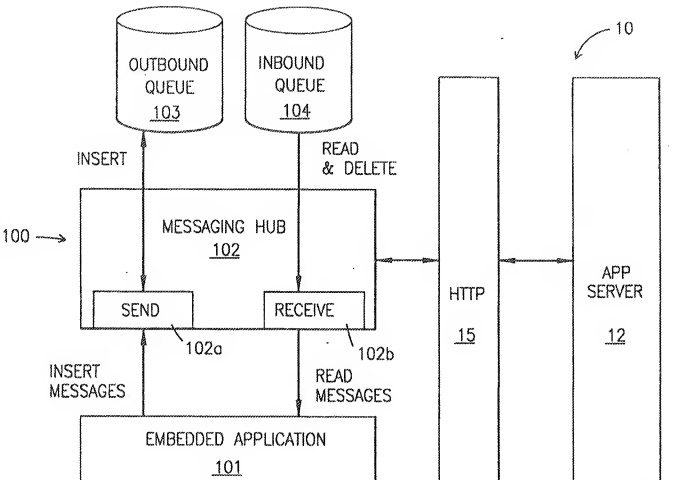

OUTBOUND QUEUE 103
INBOUND QUEUE 104
10
INSERT
READ & DELETE
100
MESSAGING HUB 102
SEND
RECEIVE
HTTP 15
APP SERVER 12
102a
102b
INSERT MESSAGES
READ MESSAGES
EMBEDDED APPLICATION 101

Fig. 4

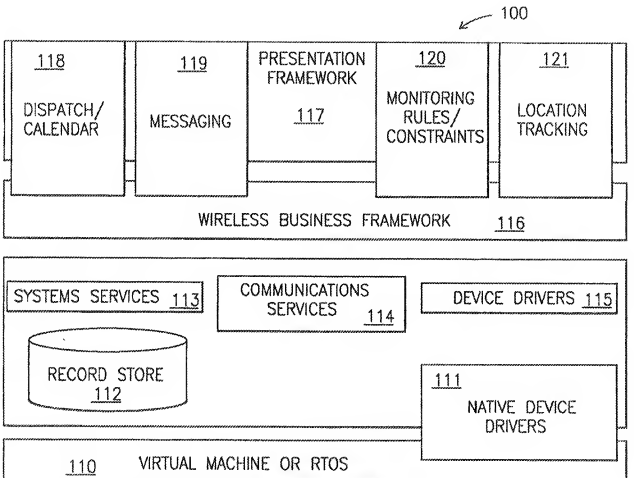
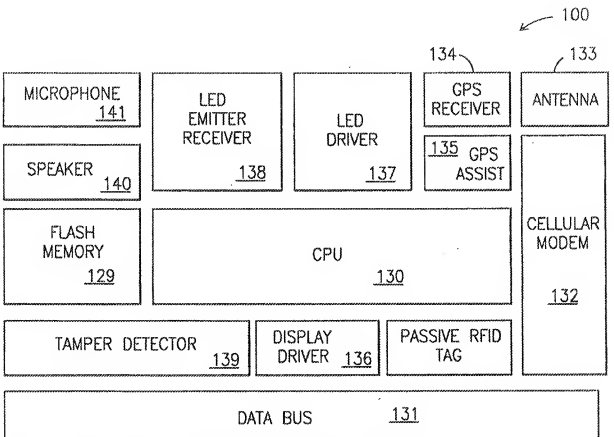

100
118
DISPATCH/ CALENDAR
119
MESSAGING
PRESENTATION FRAMEWORK
117
120
MONITORING RULES/ CONSTRAINTS
121
LOCATION TRACKING
WIRELESS BUSINESS FRAMEWORK
116
SYSTEMS SERVICES 113
COMMUNICATIONS SERVICES 114
DEVICE DRIVERS 115
RECORD STORE 112
111
NATIVE DEVICE DRIVERS
110
VIRTUAL MACHINE OR RTOS

Fig. 5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134
133
MICROPHONE
141
LED
EMITTER
RECEIVER
138
LED
DRIVER
137
GPS
RECEIVER
ANTENNA
SPEAKER
140
135 GPS
ASSIST
FLASH
MEMORY
129
CPU
130
CELLULAR
MODEM
132
TAMPER DETECTOR
139
DISPLAY
DRIVER 136
PASSIVE RFID
TAG
DATA BUS
131

Fig. 6

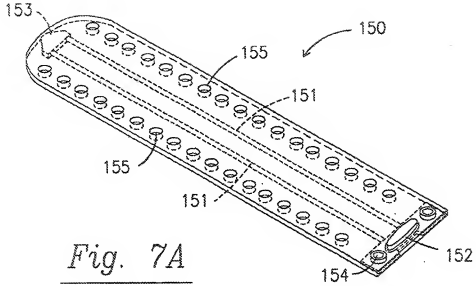

153
150
155
151
155
151
152
154

Fig. 7A

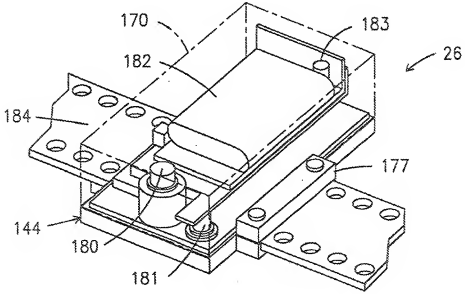

170
183
182
26
184
177
144
180
181

Fig. 7B

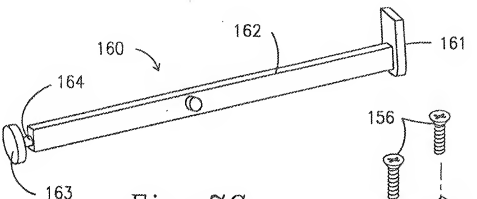

160
162
161
164
163

Fig. 7C

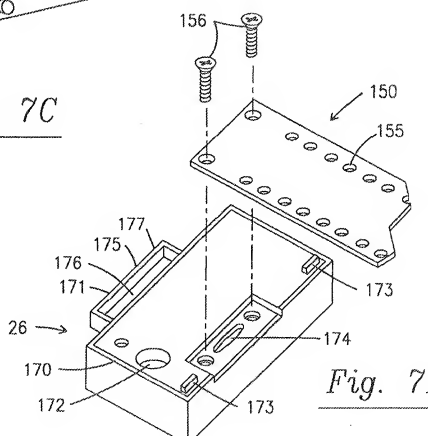

156
150
155
177
175
176
171
173
26
174
170
172
173

Fig. 7D

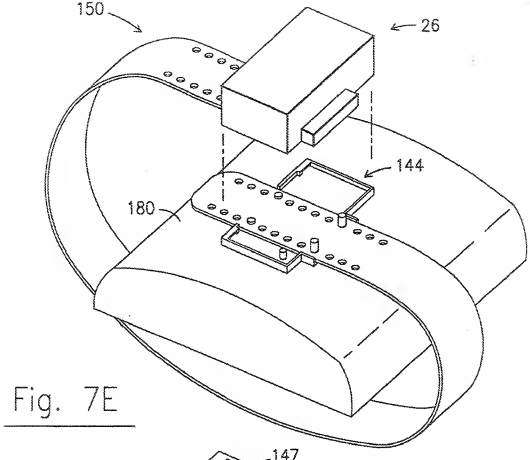


Fig. 7E

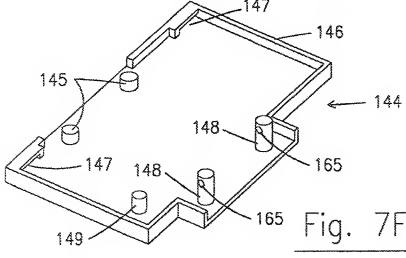


Fig. 7F

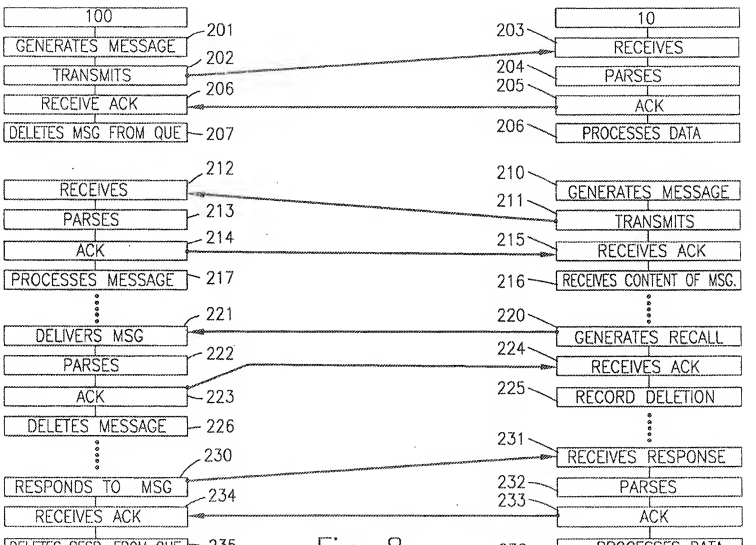

100
GENERATES MESSAGE
201
TRANSMITS
202
RECEIVE ACK
206
DELETES MSG FROM QUE
207
10
203
RECEIVES
204
PARSES
205
ACK
206
PROCESSES DATA
RECEIVES
212
PARSES
213
ACK
214
PROCESSES MESSAGE
217
DELIVERS MSG
221
PARSES
222
ACK
223
DELETES MESSAGE
226
RESPONDS TO MSG
230
RECEIVES ACK
234
DELETES RESP. FROM QUE
235
210
GENERATES MESSAGE
211
TRANSMITS
215
RECEIVES ACK
216
RECEIVES CONTENT OF MSG.
220
GENERATES RECALL
224
RECEIVES ACK
225
RECORD DELETION
231
RECEIVES RESPONSE
232
PARSES
233
ACK
236
PROCESSES DATA

Fig. 8

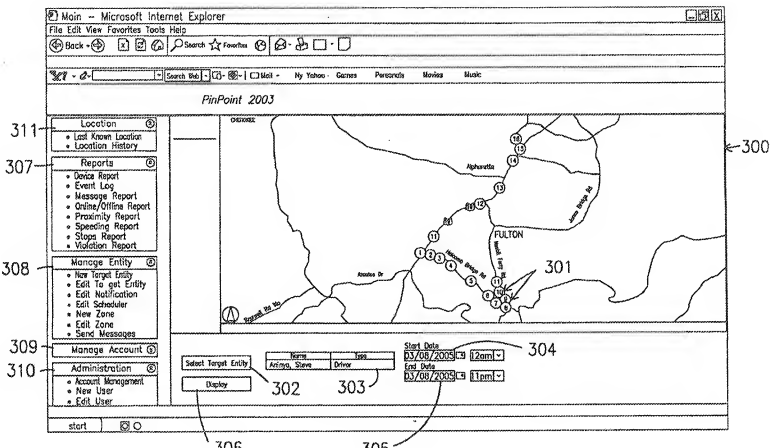

Main -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
PinPoint 2003
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Entity
New Target Entity
Edit Target Entity
Edit Notification
Edit Scheduler
New Zone
Edit Zone
Send Messages
Manage Account
Administration
Account Management
New User
Edit User
Alpharetta
FULTON
Roswell Rd
Select Target Entity
Display
Name
Type
Arriaga, Steve
Driver
Start Date
03/08/2005
12am
End Date
03/08/2005
11pm
start
311
307
308
309
310
300
301
302
303
304
305
306

Fig. 9A

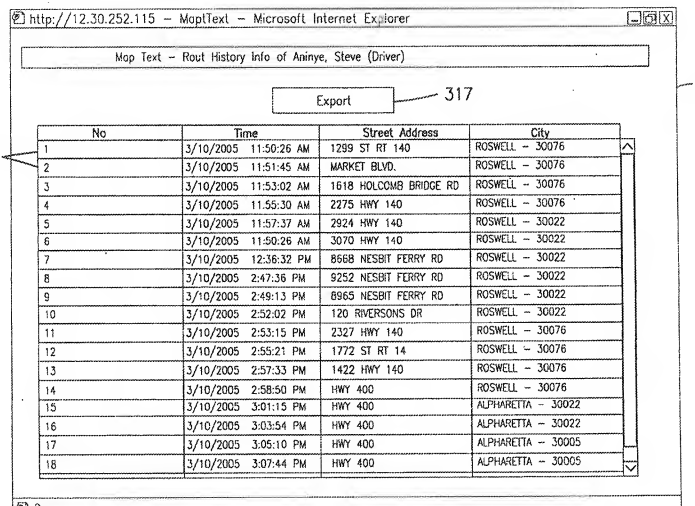

http://12.30.252.115 – MaptText – Microsoft Internet Explorer
Map Text – Rout History Info of Aninye, Steve (Driver)
315
Export
317
316
No
Time
Street Address
City
1 3/10/2005 11:50:26 AM 1299 ST RT 140 ROSWELL – 30076
2 3/10/2005 11:51:45 AM MARKET BLVD. ROSWELL – 30076
3 3/10/2005 11:53:02 AM 1618 HOLCOMB BRIDGE RD ROSWELL – 30076
4 3/10/2005 11:55:30 AM 2275 HWY 140 ROSWELL – 30076
5 3/10/2005 11:57:37 AM 2924 HWY 140 ROSWELL – 30022
6 3/10/2005 11:50:26 AM 3070 HWY 140 ROSWELL – 30022
7 3/10/2005 12:36:32 PM 8668 NESBIT FERRY RD ROSWELL – 30022
8 3/10/2005 2:47:36 PM 9252 NESBIT FERRY RD ROSWELL – 30022
9 3/10/2005 2:49:13 PM 8965 NESBIT FERRY RD ROSWELL – 30022
10 3/10/2005 2:52:02 PM 120 RIVERSONS DR ROSWELL – 30022
11 3/10/2005 2:53:15 PM 2327 HWY 140 ROSWELL – 30076
12 3/10/2005 2:55:21 PM 1772 ST RT 14 ROSWELL – 30076
13 3/10/2005 2:57:33 PM 1422 HWY 140 ROSWELL – 30076
14 3/10/2005 2:58:50 PM HWY 400 ROSWELL – 30076
15 3/10/2005 3:01:15 PM HWY 400 ALPHARETTA – 30022
16 3/10/2005 3:03:54 PM HWY 400 ALPHARETTA – 30022
17 3/10/2005 3:05:10 PM HWY 400 ALPHARETTA – 30005
18 3/10/2005 3:07:44 PM HWY 400 ALPHARETTA – 30005
Done

Fig. 9B

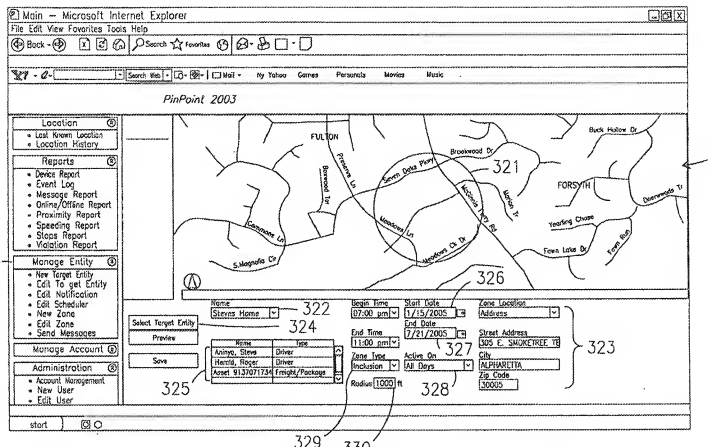

Main – Microsoft Internet Explorer
File Edit View Favorites Tools Help
PinPoint 2003
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Entity
New Target Entity
Edit Target Entity
Edit Notification
Edit Scheduler
New Zone
Edit Zone
Send Messages
Manage Account
Administration
Account Management
New User
Edit User
FULTON
Brookwood Dr
Seven Oaks Pkwy
Buck Hollow Dr
FORSYTH
Deerwoode Tr
Yearling Chase
Town Lake Dr
Town Run
Select Target Entity
Preview
Save
Name
Steves Home
Begin Time
07:00 pm
Start Date
1/15/2005
End Time
11:00 pm
End Date
7/21/2005
Zone Location
Address
Street Address
305 E. SMOKETREE TR
City
ALPHARETTA
Zip Code
30005
Zone Type
Inclusion
Active On
All Days
Radius
1000
ft
Name
Type
Aisling, Steve
Driver
Herrib, Roger
Driver
Asset 9137071734
Freight/Package
start
320
321
322
323
324
325
326
327
328
329
330
308

Fig. 10A

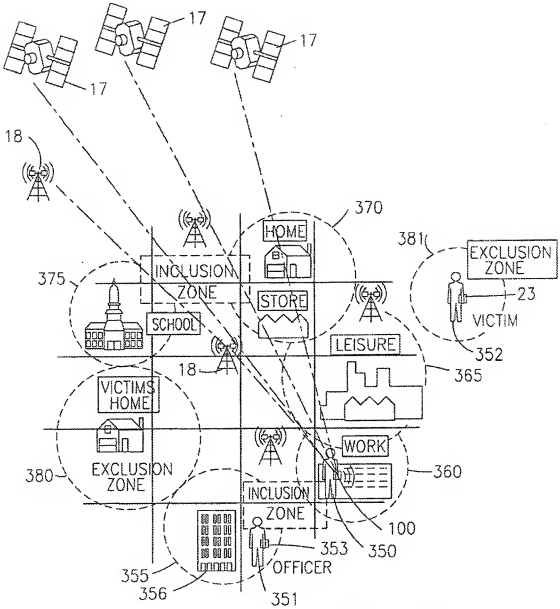

17
17
17
18
18
370
HOME
381
EXCLUSION ZONE
375
INCLUSION ZONE
STORE
23
VICTIM
SCHOOL
LEISURE
352
365
VICTIMS HOME
WORK
380
EXCLUSION ZONE
360
INCLUSION ZONE
100
353
350
OFFICER
355
356
351

Fig. 10B

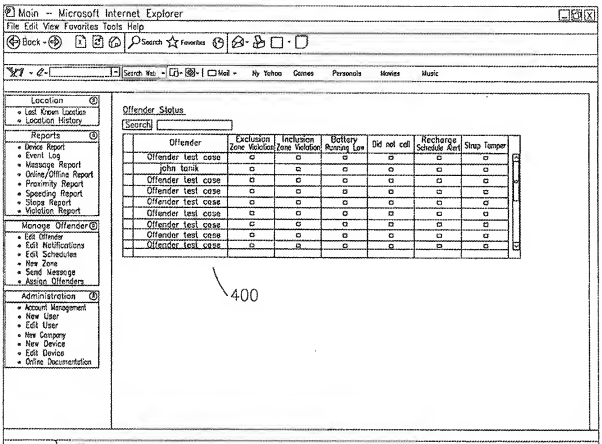

Main -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Search Web
Mail
My Yahoo
Games
Personals
Movies
Music
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
Offender Status
Search
Offender
Exclusion Zone Violation
Inclusion Zone Violation
Battery Running Low
Did not call
Recharge Schedule Alert
Strap Tamper
Offender test case
john tanik
Offender test case
Offender test case
Offender test case
Offender test case
Offender test case
Offender test case
Offender test case
400
start

Fig. 11

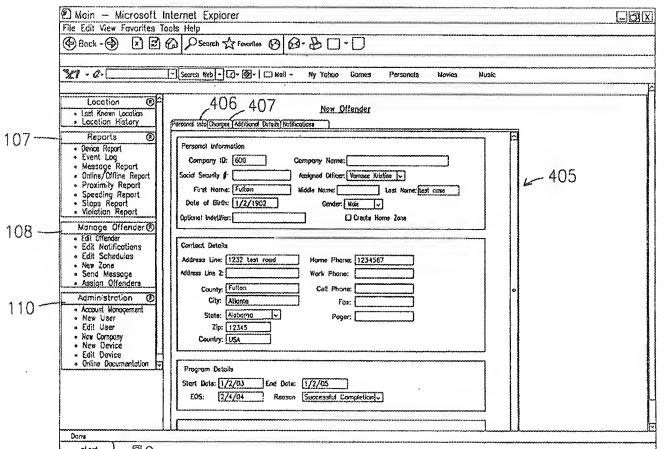

Main – Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Mail
My Yahoo
Games
Personals
Movies
Music
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
406
407
New Offender
Personal Info
Charges
Additional Details
Notifications
Personal Information
Company ID: 600
Company Name:
Social Security #:
Assigned Officer: Vanessa Kristine
First Name: Fulton
Middle Name:
Last Name: test case
Date of Birth: 1/2/1902
Gender: Male
Optional Identifier:
Create Home Zone
Contact Details
Address Line: 1232 test road
Home Phone: 1234567
Address Line 2:
Work Phone:
County: Fulton
Cell Phone:
City: Atlanta
Fax:
State: Alabama
Pager:
Zip: 12345
Country: USA
Program Details
Start Date: 1/2/03
End Date: 1/2/05
EOS: 2/4/04
Reason: Successful Completion
Done
start
107
108
110
405

Fig. 12

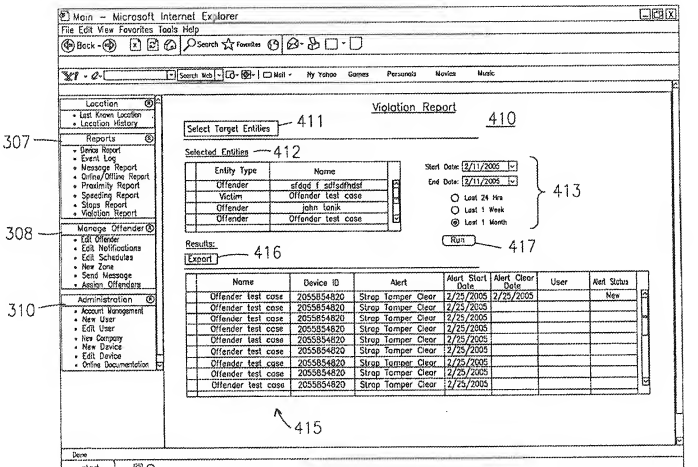

Main - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Search Web
Mail
My Yahoo
Games
Personals
Movies
Music
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
Violation Report
410
Select Target Entities
411
Selected Entities
412
Entity Type
Name
Offender
sfdgd f sdfsdfhdsf
Victim
Offender test case
Offender
john tonik
Offender
Offender test case
Start Date: 3/11/2005
End Date: 3/11/2005
Last 24 Hrs
Last 1 Week
Last 1 Month
413
Run
417
Results:
Export
416
Name
Device ID
Alert
Alert Start Date
Alert Clear Date
User
Alert Status
Offender test case
2055854820
Strap Tamper Clear
2/25/2005
2/25/2005
New
415
307
308
310
Done
start

Fig. 13

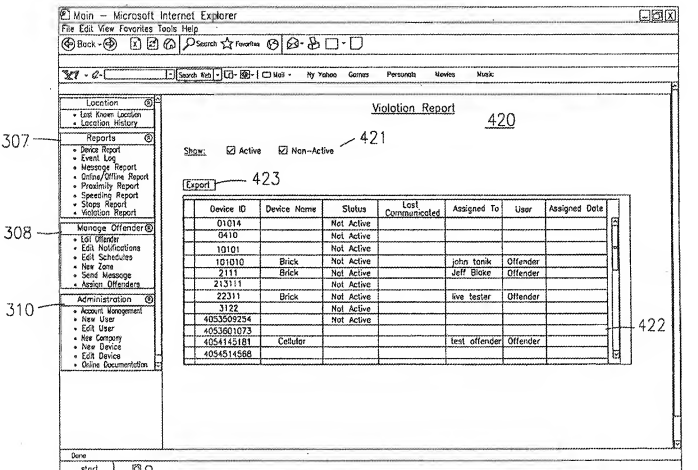

Main – Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Search Web
Mail
My Yahoo
Games
Personals
Movies
Music
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Devices
Online Documentation
Violation Report
420
Show:
Active
Non-Active
421
Export
423
Device ID
Device Name
Status
Last Communicated
Assigned To
User
Assigned Date
01014
0410
10101
101010
2111
213111
22311
3122
4053509254
4053601073
4054145181
4054514588
Brick
Brick
Cellular
Not Active
john tonik
Jeff Blake
live tester
test offender
Offender
422
307
308
310
Done
start

Fig. 14

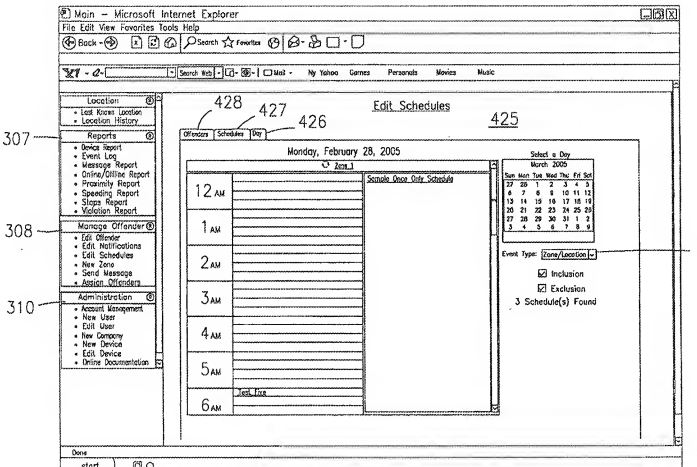

Main - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
Edit Schedules
Offenders
Schedules
Day
Monday, February 28, 2005
Zone 1
Sample Once Only Schedule
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
Test Tue
Select a Day
March 2005
Event Type: Zone/Location
Inclusion
Exclusion
3 Schedule(s) Found
Done
start
307
308
310
425
426
427
428
429

Fig. 15

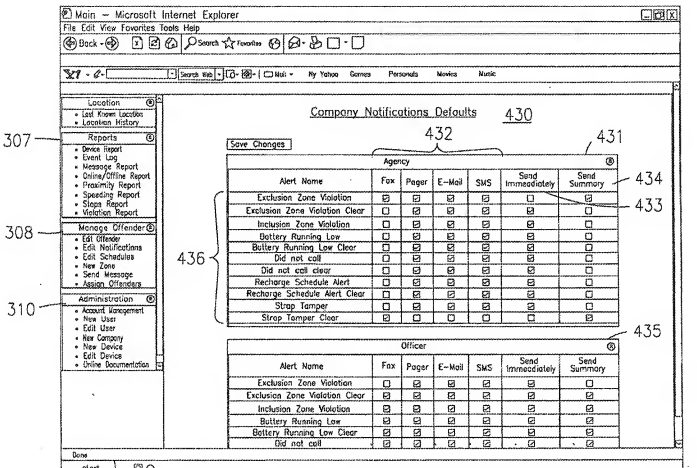

Main – Microsoft Internet Explorer
File Edit View Favorites Tools Help
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Sleep Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
Company Notifications Defaults 430
Save Changes
Agency
Alert Name
Fax
Pager
E-Mail
SMS
Send Immediately
Send Summary
Exclusion Zone Violation
Exclusion Zone Violation Clear
Inclusion Zone Violation
Battery Running Low
Battery Running Low Clear
Did not call
Did not call clear
Recharge Schedule Alert
Recharge Schedule Alert Clear
Strap Tamper
Strap Tamper Clear
Officer
Alert Name
Fax
Pager
E-Mail
SMS
Send Immediately
Send Summary
Exclusion Zone Violation
Exclusion Zone Violation Clear
Inclusion Zone Violation
Battery Running Low
Battery Running Low Clear
Did not call
Done
start
307
308
310
432
431
434
433
436
435

Fig. 16

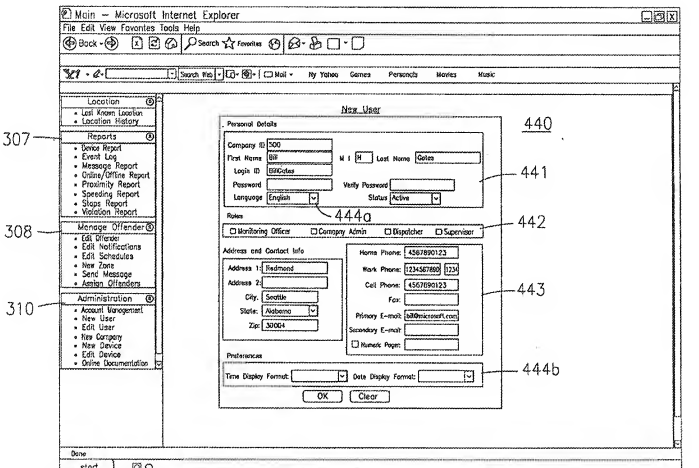

Main – Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Search Web
Mail
My Yahoo
Games
Personals
Movies
Music
Location
Last Known Location
Location History
Reports
Device Report
Event Log
Message Report
Online/Offline Report
Proximity Report
Speeding Report
Stops Report
Violation Report
Manage Offender
Edit Offender
Edit Notifications
Edit Schedules
New Zone
Send Message
Assign Offenders
Administration
Account Management
New User
Edit User
New Company
New Device
Edit Device
Online Documentation
New User
Personal Details
Company ID 500
First Name Bill
Login ID BillGates
Password
Language English
M I M
Last Name Gates
Verify Password
Status Active
Roles
Monitoring Officer
Company Admin
Dispatcher
Supervisor
Address and Contact Info
Address 1 Redmond
Address 2
City Seattle
State Alabama
Zip 30004
Home Phone 4567890123
Work Phone 1234567890 1234
Cell Phone 4567890123
Fax
Primary E-mail bill@microsoft.com
Secondary E-mail
Numeric Pager
Preferences
Time Display Format
Date Display Format
OK
Clear
Done
start
307
308
310
440
441
442
443
444a
444b

Fig. 17

Electronic Acknowledgement Receipt

EFS ID:	5553615
Application Number:	10591830
International Application Number:	
Confirmation Number:	4405
Title of Invention:	System and Method for Tracking, Monitoring, Collecting, Reporting and Communicating with the Movement of Individuals
First Named Inventor/Applicant Name:	Steve Aninye
Customer Number:	47604
Filer:	Dale S. Lazar/Karen Chang
Filer Authorized By:	Dale S. Lazar
Attorney Docket Number:	364433-000008
Receipt Date:	19-JUN-2009
Filing Date:	06-SEP-2006
Time Stamp:	16:22:13
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$555
RAM confirmation Number	2535
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Miscellaneous Incoming Letter	364433-000008AmendmentTransmittal.pdf	469241 [illegible]	no	1
Warnings:					
Information:					
2		364433-000008Amendment.pdf	1728018 [illegible]	yes	5
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	4	
	Applicant Arguments/Remarks Made in an Amendment		5	5	
Warnings:					
Information:					
3	Extension of Time	364433-000008ExtensionPetition.pdf	618558 [illegible]	no	1
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	30256 [illegible]	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2846073		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

DOCKET NO.: 364433-000008 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Honorable Commissioner for Patents
Post Office Box 1450
Alexandria, Virginia 22313-1450

Re: Application No.: 10/591,830
Applicants: Steve ANINYE
Filing Date September 6, 2006
For: SYSTEM AND METHOD FOR TRACKING, MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS

Dear Sir:

Attached hereto for filing are the following papers. The fee has been calculated as shown below.

☒ Response to Office Action dated December 26, 2008; and

☒ Request for Extension of Time Three Months.

SMALL ENTITY

	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total	17	- 20		=	x $26	
Independent	1	- 4		=	x $110	
First Presentation of Multiple Dependent Claim						$0.00
Extension of Time (3 months)						$555.00
					Total Additional Claim Fees	$555.00

Our payment in the amount of **$555.00** covering any required fees is attached hereto. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary extension of time to make the filing of the attached documents timely, please charge or credit the difference to Deposit Account No. 50-3266. Further, if these papers are not considered timely filed, then a request is hereby made under 37 C.F.R. 1.136 for the necessary extension of time.

Respectfully submitted,

DLA PIPER LLP US

Dale S. Lazar
Registration No. 28,872

Dated: June 19, 2009

PTO/SB/22 (10-04)
Approved for use through 7/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818))*	Docket Number 364433-000008
Application Number 10/591,830	Filed September 6, 2006
For SYSTEM AND METHOD FOR TRACKING, MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS	
Art Unit 2617	Examiner Sarwat CHUGHTAI

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Fee Code
☐	One Month (37 CFR 1.1 7(a)(1))	$65	2251
☐	Two Month (37 CFR 1.1 7(a)(2))	$245	2252
☒	Three Month (37 CFR 1.1 7(a)(3))	$555	2253
☐	Four Month (37 CFR 1.1 7(a)(4))	$865	2254
☐	Five Month (37 CFR 1.1 7(a)(5))	$1,175	2255

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3266. I have enclosed a duplicate copy of this sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the ☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 28,872

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____.

Signature — June 19, 2009 (Date)

Dale S. Lazar (Typed or printed name) — 703-773-4149 (Telephone Number)

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 1 forms are submitted

DOCKET NO. 364433-000008 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	Steve ANINYE	Confirmation No.	4405
Application No.	10/591,830	Group Art Unit:	2617
Filed:	September 6, 2006	Examiner:	Sarwat CHUGHTAI
For:	SYSTEM AND METHOD FOR TRACKING, MONITORING, COLLECTING, REPORTING AND COMMUNICATING WITH THE MOVEMENT OF INDIVIDUALS		

AMENDMENT UNDER 37 C.F.R. 1.111

Assistant Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

June 19, 2009

Dear Sir:

In response to the Office Action dated December 26, 2008, please amend the application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings, of claims in the application:

1. – 20. (Canceled).

21. (New) A portable tracking device comprising:

a housing;

a security strap attached to the housing;

an optical conductor extending along the strap from a first end of the strap to a second end of the strap and back to the first end;

an optical source optically coupled to a first end of the optical conductor;

an optical detector optically coupled to a second end of the optical conductor;

a tamper detector disposed in the housing, coupled to the optical detector and constructed and arranged to identify the absence and/or presence of light detected by the optical detector; and

circuitry disposed in the housing and configured and arranged to enable generation of data related to the location of the housing.

22. (New) The portable tracking device of claim 21 wherein the optical source and the optical detector are disposed in the housing.

23. (New) The portable tracking device of claim 22 wherein the first end of the securing strap is attached to the housing.

24. (New) The portable tracking device of claim 23 further comprising at least one fastener for attaching the securing strap to the housing at a point along the securing strap separated from the first end of the securing strap.

25. (New) The portable tracking device of claim 24 wherein the securing strap includes holes therethrough and the fastener passes through at least one of the holes.

26. (New) The portable tracking device of claim 24 wherein the fastener is constructed and arranged to attach the securing strap to the housing without cutting the securing strap.

27. (New) The portable tracking device of claim 25 wherein:

the housing includes a lock bracket; and

the fastener includes at least one pin attached to the lock bracket, the at least one pin being constructed and arranged to pass through at least one of the holes in the securing strap.

28. (New) The portable tracking device of claim 27 further comprising a locking pin constructed and arranged to fasten the lock bracket to the housing.

29. (New) The portable tracking device of claim 28 further comprising a housing tamper detector constructed and arranged to detect the absence of the locking pin.

30. (New) The portable tracking device of claim 21 wherein the optical conductor includes an optical cable extending along the securing strap.

31. (New) The portable tracking device of claim 21 wherein the optical conductor includes first and second optical cables extending between the first and the second ends of the securing strap and a light guide disposed at the second end of the securing strap and optically coupled to the first and second optical cables.

32. (New) The portable tracking device of claim 21 further comprising a housing tamper detector constructed and arranged to detect tampering with the housing.

33. (New) The portable tracking device of claim 32 wherein the housing tamper detector includes an optical tamper detector constructed and arranged to detect light within the housing.

34. (New) The portable tracking device of claim 32 wherein the housing tamper detector includes a magnetic field sensor constructed and arranged to be activated if metal components of the housing are dislocated.

35. (New) The portable tracking device of claim 21 wherein the circuitry includes a GPS receiver.

36. (New) The portable tracking device of claim 21 wherein the circuitry includes a cellular transceiver.

37. (New) The portable tracking device of claim 35 further comprising a transmitter disposed in the housing and configured and arranged to transmit signals related to the location of the housing based on the data generated by the GPS receiver.

REMARKS

Reconsideration and allowance of this application are respectfully requested.

Claims 1-20 stand rejected as anticipated by Layson et al. Claims 1-20 have been canceled to obviate this rejection.

Claims 21-36 are believed patentable over Layson. For example, claim 21 requires a securing strap attached to a housing and an optical conductor extending along the strap. Although Layson may disclose a tamper sensor, Layson does not teach or suggest providing an optical path extending along a securing strap attached to a housing.

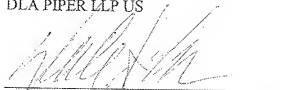
Therefore, it is respectfully suggested that claims 21-36 are patentable over Layson.

In view of the above, it is believed this application is in condition for allowance, and such a Notice is respectfully solicited.

Please charge any shortage in the fees or credit any overpayment to Deposit Account No. 50-3266.

Respectfully submitted,

DLA PIPER LLP US



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